

**WHAT IS CLAIMED IS:**

1. A system for providing product information in a supply chain, said system comprising:

at least one electronic tag device associated with products, wherein each distinct product is associated with at least one electronic tag, and wherein said electronic tag is configured to convey product information;

at least one product inventory location for holding said distinct products;

at least one electronic reading device configured to retrieve information from said electronic tag;

an electronic computing device configured to communicate with said electronic reading device and accept, process, store and output said product information;

said electronic computing device further configured to monitor inventory data representing the inventory level of said each distinct product and to initiate action to maintain an inventory level above a predefined minimum inventory level for said each distinct product; and

a customer interface associated with said electronic computing device and configured to present information related to out-of-stock items requested by a customer.

2. A system for providing product information in a supply chain as in claim 1, wherein said inventory data is at least one of (a) real-time data and (b) near real-time data.

3. A system for providing product information in a supply chain as in claim 1, wherein said electronic tag device is an RFID smart tag.

4. A system for providing product information in a supply chain as in claim 3, wherein said electronic reading device is an RFID STR device.

5. A system for providing product information in a supply chain as in claim 4, wherein said computing device is a central computer;

6. A system for providing product information in a supply chain as in claim 1, wherein said customer interface is further configured to receive a customer request for a desired product and to transfer said customer request to said electronic computing device.

7. A system for providing product information in a supply chain as in claim 6, wherein said customer interface is further configured to receive and display product information from at least one of said electronic reading device and said electronic computing device.

8. A retailer inventory system, comprising:

at least one electronic tag device associated with products, wherein each distinct product is associated with at least one electronic tag, and wherein said electronic tag is configured to convey product information;

5 a plurality of electronic reading devices configured to retrieve information from said at least one electronic tag;

a first network operating in accordance with a predetermined protocol;

a second network comprising said plurality of electronic reading devices each of which includes electronics for reading said at least one electronic tag;

10 a gateway operatively coupled to said first network and to said second network; and

an HTTP server embedded in one of (1) said gateway and (2) said plurality of electronic reading devices, for accessing said product information.

9. A retailer inventory system as in claim 8, wherein said electronic tag device is an RFID smart tag.

10. A retailer inventory system as in claim 8, wherein said electronic reading device is an RFID STR device.

11. A retailer inventory system as in claim 8, further comprising a customer interface.

12. A retailer inventory system as in claim 8, wherein said gateway provides continuous access to said second network.

13. A method for managing products in a supply chain, said method comprising:

associating RFID smart tags with products, wherein each distinct product is associated with at least one smart tag, the smart tags containing product  
5 information regarding their respective product;

storing at least one said distinct product in a first inventory location;

providing at least one RFID STR within communication distance of said at least one smart tag;

providing a customer interface;

10 providing a first computer configured to communicate with said at least one RFID STR and said customer interface;

configuring said customer interface to receive a customer request for a desired product and to transfer said customer request to at least one of said first computer and said at least one RFID STR;

15 configuring at least one of said first computer and said at least one RFID STR to initiate a transfer of said product information, for the desired product, to said customer interface upon receiving said customer request; and

wherein said product information comprises information related to out-of-stock events when said desired product is determined to be out-of-stock in said first inventory location.

20 14. A method for managing products in a supply chain as in claim 13, wherein said customer request is at least one member of the group consisting of: (1) a customer request generated by the customer manually entering the request into the customer interface; (2) a customer request generated over the Internet and stored in a database; (3) a customer request generated by speaking into the customer interface; and (4) a customer request that is transmitted from a portable electronic device to said customer interface.

15. A method for managing products in a supply chain as in claim 13, further comprising the step of providing a second inventory location;

16. A method for managing products in a supply chain as in claim 15, wherein said first inventory location is a customer display inventory location and said second inventory location is a retailer storage inventory location.

17. A method for managing products in a supply chain as in claim 15, further comprising the step of configuring said first computer to determine when an substitute product to the desired product is sold by the retailer, and if so, performing the following steps:

5 requesting said at least one RFID STR to scan said first inventory location  
and said second inventory location to obtain a substitute product inventory count  
and a desired product inventory count;

transferring to said customer interface substitute product information and a  
substitute-product-purchase incentive when said substitute product inventory  
10 count minus said desired product inventory count exceeds a predefined value.

18. A method for managing products in a supply chain as in claim 17,  
wherein said substitute product is one of (a) the same brand of product as the  
desired product and the same type of product as the desired product but having a  
different expiration date than the desired product, and (b) the same type of product  
5 as the desired product but being a different brand of product from the desired  
product.

19. A method for managing products in a supply chain as in claim 18,  
further comprising the step of configuring said first computer to request said at  
least one RFID STR to scan said first inventory location to determine if said  
desired product is available in said first inventory location and to perform the  
5 following steps when said desired product is not in said first inventory location:

issue a said first inventory location restock request;

transfer a product being restocked message to said customer interface;

transfer a desired product restock time estimate to said customer interface;

and

10 transfer a wait-to-purchase incentive to said customer interface.

20. A method for managing products in a supply chain as in claim 19,  
further comprising the step of configuring said first computer to perform any  
combination of the following first inventory location restock steps:

5 to determine when said desired product restock time estimate has expired  
without said desired product being restocked;

to establish a new desired product restock time estimate and to transfer  
said new desired product restock time estimate to said customer interface;

to transfer to said customer interface a wait-to-purchase incentive; and

10 to repeat said first inventory location restock steps until the occurrence of at  
least one event from the group of events consisting of (1) said desired product is

restocked; (2) customer cancels restock request; (3) retailer cancels restock request; and (4) restock request automatically cancels.

21. A method for managing products in a supply chain as in claim 19, further comprising the steps of configuring said first computer to determine when said desired product is out of stock and to transfer an out of stock message to said customer interface and to transfer to said customer interface a come-back-to-purchase incentive.

22. A method for managing products in a supply chain as in claim 22, further comprising the steps of:

configuring said first computer to determine if an alternative product to said desired product is sold; and

configuring said first computer to acquire alternative product information and to transfer said alternative product information to said customer interface.

23. A method for managing products in a supply chain as in claim 22, further comprising the step of configuring said first computer to transfer an alternative-product-purchase incentive to customer interface.

24. A method for managing products in a supply chain as in claim 13, further comprising the step of determining when said desired product is not sold by the retailer and transferring a product-not-sold message to said customer interface.

25. A method for managing products in a supply chain as in claim 24, further comprising the step configuring said first computer to locate any alternative products sold by the retailer, to access at least one data source containing alternative product information, and to initiate a transfer of at least part of said alternative product information to said customer interface.

26. A method for managing products in a supply chain as in claim 25, wherein said at least one data source containing alternative product information is at least one of (a) a database and (b) a RFID STR device.

27. A method for managing products in a supply chain as in claim 25, further comprising the step of transferring an alternative-product-purchase incentive to said customer interface.

28. A method for managing products in a supply chain as in claim 13, further comprising the step of configuring said first computer to determine when a substitute product to the desired product is sold by the retailer, and if so, performing the following steps:

5 requesting said at least one RFID STR to scan said first inventory location to obtain a substitute product inventory count and a desired product inventory count;

transferring to said customer interface substitute product information and a substitute-product-purchase incentive when said substitute product inventory  
10 count minus said desired product inventory count exceeds a predefined value.

29. A method for managing products in a supply chain, said method comprising:

associating RFID smart tags with products, the smart tags containing information regarding their respective product;

5 providing a first inventory location and placing said RFID smart tagged products in said first inventory location;

providing at least one RFID STR within communication distance of said RFID smart tags;

10 providing a central computer configured to communicate with said at least one RFID STR;

configuring said central computer to use said at least one RFID STR to acquire a first inventory location count for said RFID smart tagged products;

comparing said first inventory location count to a predefined first inventory location minimum value for respective products; and

15 generating a first inventory location restock request when said first inventory location count drops below said predefined first inventory location minimum value.

30. A method for managing products in a supply chain as in claim 29, wherein said step of generating a first inventory location restock request is one of a manual request and an automatic request.

31. A method for managing products in a supply chain as in claim 29, wherein said first inventory location count is one of a real-time count and a near real-time count.

32. A method for managing products in a supply chain as in claim 29, further comprising the steps of:

configuring said central computer to access event criteria for at least one said RFID smart tagged products;

5 configuring said central computer to monitor at least one information-data source; and

configuring said central computer to adjust said predefined first inventory location minimum value in response to data received from said at least one information-data source in light of said event criteria.

33. A method for managing products in a supply chain as in claim 32, wherein said information-data source is one of a webservice and a computer database.

34. A method for managing products in a supply chain as in claim 29, further comprising the steps of:

providing a second inventory location and placing said RFID smart tagged products in said retailer storage inventory location.

5 configuring said central computer to use said at least one RFID STR to acquire a second inventory location count for said RFID smart tagged product;

configuring said central computer to compare said second inventory location count to a predefined second inventory location minimum value for respective products; and

10 generating a second inventory location restock request when said second inventory location count drops below said predefined second inventory location inventory minimum value.

35. A method for managing products in a supply chain as in claim 34, further comprising the steps of:

configuring said central computer to access event criteria for said RFID smart tagged products;

5 configuring said central computer to monitor at least one information-data source; and

configuring said central computer to adjust said predefined second inventory location minimum value in response to data received from said information-data source in light of said event criteria.

36. A method for managing products in a supply chain as in claim 35, wherein said information-data source is one of a webservice and a computer database.

37. A method for managing products in a supply chain as in claim 35, wherein said first inventory location is a customer display inventory location and said second inventory location is a retailer storage inventory location.

38. A method for managing products in a supply chain, said method comprising:

associating RFID smart tags with products, the smart tags containing information regarding their respective product;

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providing at least one distribution center inventory location;

storing said products at said distribution center inventory location;

providing at least one RFID STR within communication distance of said RFID smart tags;

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providing a central computer configured to communicate with said at least one RFID STR;

configuring said central computer to use said at least one RFID STR to acquire a distribution center inventory count for at least one said distinct product; and

15

generating a distribution center inventory restock request when said distribution center inventory count drops below said predefined distribution center inventory minimum value.

39. A method for managing products in a supply chain as in claim 38, wherein said RFID smart tags are associated with said products at said distribution center.

40. A method for managing products in a supply chain as in claim 38, further comprising the steps of:

providing at least one retailer storage inventory location;



storing at least one RFID smart tagged product in said retailer storage  
5 inventory;

configuring said central computer to initiate a retailer storage inventory  
restock process when said distribution center database receives a retailer storage  
inventory restock request;

41. A method for managing products in a supply chain as in claim 38,  
further comprising the steps of:

configuring said central computer to access event criteria for said at least  
one smart tagged product;

5 configuring said computer to monitor at least one information-data source;  
and

configuring said computer to adjust said predefined distribution center  
inventory minimum value in response to data received from said at least one  
information-data source in light of said event data.

42. A method for managing an out-of-stock event comprising the steps  
of:

placing products associated with at least one electronic tag in a first-  
inventory location and a second-inventory location;

5 receiving a customer request for a desired product;

determining when said desired product is not presently in said first-inventory  
location but is presently in said second-inventory location using at least one of  
real-time inventory data and near real-time inventory data for said first-inventory  
location and said second inventory-location; and

10 performing the following steps when it is determined that said desired  
product is not in said first-inventory location but is in said second-inventory  
location:

(a) notifying said customer that said desired product is  
temporarily out-of-stock in said first-inventory location;

15 (b) notifying said customer that said desired product is in said  
second-inventory location and that a restock request has been initiated;

(c) presenting said customer with an estimated time required to  
restock said desired product;

(d) providing said customer with a wait-to-purchase incentive.

43. A method for managing an out-of-stock event as in claim 42, further comprising the step of offering said customer a come-back-to-purchase incentive when said customer declines said wait-to-purchase incentive.

44. A method for managing an out-of-stock event as in claim 42, further comprising the step of offering said customer a come-back-to-purchase incentive when it is determined that said desired product is not in said first-inventory location and not in said second-inventory location.

45. A method for managing an out-of-stock event as in claim 42, wherein said electronic tag is an RFID smart tag.

46. A method for managing an out-of-stock event as in claim 42, wherein said first-inventory location is a customer-display-inventory location and wherein said second-inventory location is at least one of: (a) a retailer-storage-inventory location; (b) a loading dock; (c) an off-site retailer storage; (d) a second retailer store; (e) a manufacturer storage location; and (f) a distribution center storage location.

47. A method for managing an out-of-stock event comprising the steps of:

placing products associated with at least one electronic tag in a first-inventory location and a second-inventory location;

determining when a customer is searching for a desired-product in a first-inventory location;

automatically determining when said desired product is presently out-of-stock in said first-inventory location;

automatically determining when said desired product is in a second-inventory location;

automatically notifying said customer that said desired product is not in said first-inventory location but is in said second-inventory location;

presenting said customer with at least one of the following:

(a) offer in-store delivery of said desired product;

(b) offer out-of-store delivery of said desired product;

- (c) offer to have said desired product available at a point-of-sale where said customer is to check-out;
- (d) offer a wait-to-purchase incentive; and
- (e) offer an alternative-product purchase incentive.

48. A method for managing an out-of-stock event as in claim 47, wherein said step of determining when a customer is looking for a desired product in a first-inventory location comprises at least one of the following:

- (a) detecting when said customer pushes a button next to a first-inventory location that has an out-of-stock product;
- (b) detecting when said customer's location remains substantially fixed near a first-inventory location that has an out-of-stock product; and
- (c) detecting when a customer-interface associated with said customer remains substantially fixed near a first-inventory location that has an out-of-stock product.

49. A method for managing an out-of-stock event as in claim 47, further comprising the step of determining when said desired product is not in said first-inventory location and not in said second-inventory location and offering said customer at least one of the following: (a) a come-back-to-purchase incentive; (b) out-of-store delivery of said desired product to a customer designated location; and (c) offer an alternative-product purchase incentive.

50. A method for managing an out-of-stock event as in claim 47, wherein said electronic tag is an RFID smart tag.